

Spine Injury In Children

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Pediatric spine injury is altogether a different entity compared to adult spinal injury owing to different biomechanics, injury mechanisms, diagnostic challenges and management. The reported incidence of spinal injuries in children is between 2-5 % of all spinal injuries. The cervical spine is the most frequently affected area especially in the younger children followed by thoracolumbar injuries which are otherwise more common in older children. Road Traffic Accidents are the leading cause of injury across all age groups. Other causes include fall, athletic activities, diving injuries, gunshot injury and child abuse. Infants are at risk for cervical spine injuries during the obstetric period as well as during early development because of their lack of head control; however, most cervical spine injuries in infants are spinal cord injury without radiologic abnormality (SCIWORA) and are often related to child abuse. The immature spine is hypermobile because of ligamentous laxity, and the facet joints are oriented in a more horizontal position; both of these properties predispose children to more forward translation. Plain radiographs remain the standard first line for evaluating cervical spine injury in children. The presence of tenderness and a distracting injury are the most common clinical presentations of a cervical spine injury and the initial survey should include an anteroposterior view, open-mouth odontoid view, and lateral view of the cervical spine and radiograph of the area of the visible swelling, localized tenderness or deformity. If an injury is present, further evaluation with an MRI is desired.

The immediate management of spinal injuries in children is immobilization of the spine, however, one needs to be careful as the standard backboard used in adults causes excessive flexion of cervical spine in children owing to their large head size. The goals of treatment for all spinal injuries is to maximize the potential for recovery of spinal cord function if an SCI was present and to provide skeletal stability to the spinal column to protect against future SCI. These two goals may be analysed separately when both instability and SCI exist. Optimizing return of any lost spinal cord function is paramount, and the potential for recovery of spinal cord function in general is greater in children than in adults.